

	<p><b>Math Learning Goals</b></p> <ul style="list-style-type: none"> <li>Participants will co-construct understanding of the terminology: pattern elements, core, repetition, pattern family</li> <li>Participants will understand an instructional sequence for patterning that leads to algebraic thinking</li> <li>Participants will articulate connections between repeating patterns and the 3 focus concepts from Plenary 1 and 2 (multiple representations, generalizations and multiplicative thinking)</li> </ul>	<p><b>Materials</b></p> <ul style="list-style-type: none"> <li>2 manipulatives /table</li> <li>Chart paper</li> <li>Markers</li> <li>Tape</li> <li>Student patterning samples (photos)</li> <li>Blank cards for Math Word Wall</li> <li>Wool/string</li> </ul>
<p><b>Minds On...</b></p> <p>DI</p>	<p><b>Groups of Four→ Making Connections</b></p> <ul style="list-style-type: none"> <li>Participants create the outline for an H-map labelled ‘Repeating Patterns’ on one side and ‘Growing Patterns’ on the other.</li> <li>Participants record what they know about these two topics, making connections to what they heard in Plenary 1 and 2.</li> </ul> <p><b>Table groups→ Pattern Building</b></p> <p>Repeating Patterns:</p> <ul style="list-style-type: none"> <li>Show participants two photos of student created patterns.</li> <li>Participants choose one of the patterns.</li> <li>Facilitator says: “Make two patterns that are the same as the one you chose.”</li> <li>Participants at each table create 2 patterns with the same core as the photo model using two different manipulatives on their tables.</li> <li>Participants justify that they have created the ‘same’ pattern.</li> <li>Facilitator records evidence/proof that participants share.</li> <li>Highlight above terminology and introduce language (e.g., pattern family) as necessary-add any terminology to our Math Word Wall (participants to capture the word and an example as it comes up in the session).</li> </ul>	
<p><b>Action!</b></p>	<p><b>Individual→ Building Content Knowledge</b></p> <ul style="list-style-type: none"> <li>Article: Using Repeating Patterns-read pages 9-11 (stop at heading: Viewing Repeating Patterns Through New Lenses)</li> <li>Facilitator will discuss the instructional sequence (copy, extend, translate/create)</li> </ul> <p><b>Partners → Responding to Students</b></p> <ul style="list-style-type: none"> <li>Look at the picture of a student pattern. What does this student know? What can he or she do? How would you respond to this student?</li> </ul> <p><b>Questions for Discussion:</b></p> <ul style="list-style-type: none"> <li>How might we increase the complexity of repeating patterns?</li> <li>What role does material choice play?</li> <li>What other strands might link to repeating patterns?</li> <li>How might experiences in this strand impact the complexity of this student’s patterns?</li> <li>Why is it important to begin to create more complex patterns?</li> </ul> <p><b>Partners → Creating a Complex Repeating Pattern</b></p> <ul style="list-style-type: none"> <li>Working with a partner, participants create a complex repeating pattern.</li> <li>Participants isolate the core of their pattern and prove to others at the table how they know it is the core.</li> <li>Facilitator may ask: How can you show your core (frame it, circle it, underline it...)?</li> <li>Participants find someone who has the same pattern core as theirs (belongs to the same pattern family).</li> <li>Participants justify how they know their patterns are the same.</li> </ul>	

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	<p><b>Home Activity or Further Classroom Consolidation</b></p> <p><b>Journal-Continue reading the article 'Using Repeating Patterns to Explore Functional Thinking' beginning on page 11. Make note of new ways of connecting repeating patterns to algebra suggested by the authors.</b></p>